

10/723,195
DN GSIE 8803US
Amendment Dated May 22, 2006
Reply to Office Action of February 22, 2006

IN THE CLAIMS

1. (Previously presented) An afterburner for an internal combustion engine of a motor vehicle, the afterburner comprising:

a screen without a catalyst affixed to an intake pipe by interference fit and located upstream of an exhaust gas recirculation valve, wherein the screen captures and burns particles contained in an exhaust gas stream which are a size large enough to obstruct the exhaust gas recirculation valve;

wherein the exhaust gas stream heats the screen to a temperature sufficient to burn the particles.

2. (Original) An afterburner as in claim 1, wherein the screen is thimble-shaped.

3. (Original) An afterburner as in claim 1, wherein the screen has a mesh size of about 12 to 20.

4. (Original) An afterburner as in claim 1, wherein the screen has a minimum size of 5 mesh.

5. (Original) An afterburner as in claim 1, wherein the screen has a maximum size of 40 mesh.

6. (Canceled)

7. (Canceled)

8. (Canceled)

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9. (Original) An afterburner as in claim 1, wherein the screen is made from a material with a high thermal conductivity.

10. (Original) An afterburner as in claim 9, wherein the screen is made from stainless steel.

11. (Previously presented) An exhaust gas recirculation valve system for a motor vehicle comprising:
an exhaust gas recirculation valve;
an intake pipe coupled to an intake orifice of the exhaust gas recirculation valve;
a screen affixed to the intake pipe by interference fit and positioned adjacent to an exhaust gas manifold, so that the screen captures and burns particles contained in an exhaust gas which are a size large enough to obstruct the exhaust gas recirculation valve;

wherein the exhaust gas stream heats the screen to a temperature sufficient to burn the particles.

12. (Previously presented) An exhaust gas recirculation valve system for a motor vehicle as in claim 11, wherein the exhaust gas recirculation valve is an integral backpressure type valve.

13. (Previously presented) An exhaust gas recirculation valve system for a motor vehicle as in claim 11, wherein the exhaust gas recirculation valve is a ported type valve.

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14. (Previously presented) An exhaust gas recirculation valve system for a motor vehicle as in claim 11, wherein the exhaust gas recirculation valve is an electronic type valve.

15. (Previously presented) An exhaust gas recirculation valve system for a motor vehicle as in claim 11, wherein the exhaust gas recirculation valve is a valve and transducer type valve.

16. (Previously presented) An exhaust gas recirculation valve system as in claim 11, wherein the screen is thimble-shaped.

17. (Canceled)

18. (Canceled)

19. (Previously presented) An exhaust gas recirculation valve system as in claim 11, wherein the screen is made from a material with a high thermal conductivity.

20. (Previously presented) An exhaust gas recirculation valve system as in claim 19, wherein the screen is made from stainless steel.

21. (Canceled)

22. (Canceled)

23. (Previously presented) An afterburner for an internal combustion engine of a motor vehicle, the afterburner comprising:

a screen without a catalyst affixed to an intake pipe by interference fit and located upstream of an exhaust gas recirculation valve, wherein the screen captures

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and burns particles contained in an exhaust gas stream which are a size large enough to obstruct the exhaust gas recirculation valve;

wherein the exhaust gas stream continuously heats the screen to a temperature sufficient to burn the particles while the exhaust gas stream is at least 900°F.

24. (Previously presented) An afterburner as in claim 23, wherein the screen is thimble-shaped.

25. (Previously presented) An afterburner as in claim 23, wherein the screen has a mesh size of about 12 to 20.

26. (Previously presented) An afterburner as in claim 23, wherein the screen has a minimum size of 5 mesh.

27. (Previously presented) An afterburner as in claim 23, wherein the screen has a maximum size of 40 mesh.

28. (Canceled)

29. (Canceled)

30. (Previously presented) An afterburner as in claim 23, wherein the screen is made from a material with a high thermal conductivity.

31. (Previously presented) An afterburner as in claim 23, wherein the screen is made from stainless steel.

32. (Canceled)

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33. (Currently amended) ~~The exhaust gas recirculation valve system of claim~~
~~32. An exhaust gas recirculation valve system for a motor vehicle comprising:~~

an exhaust gas recirculation valve;

an intake pipe coupled to an intake orifice of the exhaust gas recirculation valve;

a screen located upstream of the exhaust gas recirculation valve, the screen
being affixed to the intake pipe solely with an interference fit; and

wherein the screen has an outwardly flared open end which, when the screen is pushed down into an open end of the intake pipe, engages the interior of the pipe and prevents the screen from moving in the pipe during normal operation of the system.

34. (Previously presented) A method of afterburning large particles in an exhaust gas stream of an internal combustion engine, the exhaust stream comprising at least one molar percent oxygen, the method comprising pushing a screen into a pipe of an exhaust system of the engine next to an exhaust manifold, which is heated by the exhaust gas stream to a temperature of at least 900°F, and holding the screen in position by friction.

35. (Previously presented) The method of claim 34 wherein the screen has an outwardly flared open end which, when the screen is pushed down into an open end of the pipe, engages the interior of the pipe and prevents the screen from moving in the pipe during normal operation of the system.

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36. (Previously presented) An afterburner as in claim 1, wherein the screen is affixed to an intake pipe and positioned adjacent to an exhaust manifold.

37. (Previously presented) An afterburner as in claim 23, wherein the screen is affixed to an intake pipe and positioned adjacent to an exhaust manifold.

38. (New) An afterburner for an internal combustion engine of a motor vehicle, the afterburner comprising:

a screen without a catalyst affixed to an intake pipe and located upstream of an exhaust gas recirculation valve, the screen having an open end with an outer diameter that is larger than the inner diameter of the intake pipe, the screen being capable of capturing and burning particles contained in an exhaust gas stream which are a size large enough to obstruct the exhaust gas recirculation valve, the screen being capable of being heated by the exhaust gas stream to a temperature sufficient to burn the particles.